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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/832,631	04/11/2001	Robert K. Rowe	1023.1123101	1809
28075	7590	02/28/2006	EXAMINER	
CROMPTON, SEAGER & TUFTE, LLC 1221 NICOLLET AVENUE SUITE 800 MINNEAPOLIS, MN 55403-2420			LAVARIAS, ARNEL C	
			ART UNIT	PAPER NUMBER
			2872	

DATE MAILED: 02/28/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/832,631	ROWE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Amel C. Lavarias	2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-60, 63 and 64 is/are pending in the application.
- 4a) Of the above claim(s) 8, 10, 12, 17, 20-28, 36, 41, 44-52 and 54-60 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 53 is/are allowed.
- 6) ☒ Claim(s) 1, 2, 9, 11, 13-16, 18, 19, 29, 30, 35, 37-40, 42 and 43 is/are rejected.
- 7) ☒ Claim(s) 3-7, 31-34, 63 and 64 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Drawings***

1. The replacement drawings were received on 12/13/05. These drawings are acceptable.

### ***Response to Amendment***

2. The amendments to the specification and abstract of the disclosure in the submission dated 12/13/05 are acknowledged and accepted. In view of these amendments, the objections to the specification in Sections 8-9 of the Office Action dated 10/3/05 are respectfully withdrawn.
3. The cancellation of Claims 61-62 in the submission dated 12/13/05 is acknowledged and accepted.
4. The addition of Claims 63-64 in the submission dated 12/13/05 is acknowledged and accepted.

### ***Response to Arguments***

5. Applicant's arguments filed 12/13/05 have been fully considered but they are not persuasive.
6. The Applicants argue that, with respect to Claims 1 and 29, as well as Claims 2, 9, 11, 13-16, 18-19, 30, 35, 37-40, 42-43 which depend on Claims 1 and 29, Bates fails to teach or reasonably suggest a spectrometer or a spectrometer system including a light source. The Examiner respectfully disagrees. Specifically, the disclosure of Bates relates to a

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spectrometer and/or spectrometer system (See especially Figures 1 and 10-11, where Bates specifically discloses Figures 10 and 11 to be embodiments of prism spectrometers, col. 3, lines 14-18). In addition, Bates discloses that the radiation incident to the spectrometer may be light. Such light may be generated from any particular source, such as a laser (See col. 1, lines 4-39; col. 3, lines 18-52). However, in general, the incident light to be measured is disclosed to come from any unspecified source (col. 8, lines 17-48).

7. The Applicants further argue that, with respect to Claims 1 and 29, as well as Claims 2, 9, 11, 13-16, 18-19, 30, 35, 37-40, 42-43 which depend on Claims 1 and 29, the inclusion of a sampler as provided by the combined teachings of Bates and Ozaki et al. would render the device disclosed by Bates unusable for its intended purpose. The Examiner respectfully disagrees. Applicants' remarks are moot with respect to Claim 29 and its dependent claims since Claim 29 fails to recite a sampler. With respect to Claim 1 and its dependent claims, the device disclosed by Bates (See particularly Figures 1, 10-11 of Bates) is intended to specifically measure particular characteristics of light (See col. 1, line 42-col. 2, line 12 of Bates) that is incident to the disclosed spectrometer (See Figure 10 of Bates), e.g. wavelength distribution of light over a given wavelength bandwidth range or spectral intensity distribution. Similarly, the device (See Figures 2, 8 of Ozaki et al.) of Ozaki et al. is also designed to measure the spectral characteristics of the light incident to the spectrometer (See 22, 24, 20, 26, 28, 30, 32 in Figure 2 of Ozaki et al.). The combined teachings of Bates and Ozaki et al. clearly disclose to one of ordinary skill in the art that particular characteristics of incident light in the form of scattered light from

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a sample located in a sampler and illuminated by a source may be determined by the disclosed spectrometer of Bates. Further, it is noted that particular features upon which applicant relies (i.e., specific positional placement of the sampler, such as between the filter and encoder, between the filter and source, or between the encoder and detector) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

8. Claims 1-2, 9, 11, 13-16, 18-19, 29-30, 35, 37-40, 42-43 are again rejected as follows.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 29-30, 35, 43 are rejected under 35 U.S.C. 102(b) as being anticipated by Bates (U.S. Patent No. 3929398), of record.

Bates discloses a spectrometer (See Figures 1-2, 10-11) for use in a spectroscopic system, the spectroscopic system including a light source (See for example col. 1, lines 4-13) for generating light and a detector for receiving light (See 16, 24 in Figures 1-2), the spectrometer comprising an optical filter (See 12 in Figures 1-2; col. 4, lines 13-31), such as a circular variable filter (See also col. 5, lines 25-39), for receiving light from the light source, the filter having a plurality of bandpass regions, wherein light within a bandpass

region is transmitted through the optical filter such that for each bandpass region there is a corresponding passband of light, the optical filter further disposed such that a plurality of passbands of light pass through the optical filter from the light source simultaneously; and an encoding unit (See 18 in Figures 1-2) for encoding selected passbands of light corresponding to bandpass regions of the optical filter, the optical encoding unit configured for selecting subsets of the passbands of light. Bates additionally discloses the optical filter substantially reflecting light when the incident light is of a wavelength outside the plurality of bandpass regions (It is noted that the interference wedge filter 12 of Bates inherently reflects any wavelengths of light that it does not transmit); the optical filter being disposed adjacent the light source (See Figures 1-2); and the encoding unit comprising a spatial light modulator (See 18 in Figures 1-2).

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 37-40, 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bates in view of Holm-Kennedy et al. (U.S. Patent No. 5784507), of record.

Bates discloses the invention as set forth above in Claim 29, except for the optical filter comprising one or more dielectric bandpass filters, such as one or more linear or nonlinear variable filters. However, Holm-Kennedy et al. discloses several embodiments

of conventional interference wedge filters based on dielectric thin films for spectrometer applications (See for example Abstract), wherein the wedge filters may be linear or nonlinear (See Figures 1-5). In addition, more than one wedge filter may be utilized in series (See for example Figure 3). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the optical filter of the spectrometer of Bates comprise one or more dielectric bandpass filters, such as one or more linear or nonlinear variable filters, as taught by Holm-Kennedy et al., for the purpose of providing controlled bandwidth characteristics while minimizing or eliminating crosstalk.

13. Claims 1-2, 9, 11, 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bates in view of Ozaki et al. (U.S. Patent No. 5870188), of record.

Bates discloses a spectrometer system (See Figures 1-2, 10-11) for performing spectroscopic determination on biological media, the spectrometer system comprising a light source (See for example col. 1, lines 4-13) for generating light; a detector for receiving the non-absorbed light (See 16, 24 in Figures 1-2) and for generating an electric signal indicative of the non-absorbed light; an optical filter (See 12 in Figures 1-2; col. 4, lines 13-31), such as a circular variable filter (See also col. 5, lines 25-39), positioned to receive light from the light source, the filter having a plurality of bandpass regions, wherein light within a bandpass region is transmitted through the optical filter such that for each bandpass region there is a corresponding passband of light; and an encoding unit (See 18 in Figures 1-2) positioned for encoding selected passbands of light corresponding to bandpass regions of the optical filter, the optical encoding unit configured for selecting

subsets of the passbands of light. Bates additionally discloses the optical filter substantially reflecting light when the incident light is of a wavelength outside the plurality of bandpass regions (It is noted that the interference wedge filter 12 of Bates inherently reflects any wavelengths of light that it does not transmit); the optical filter being disposed adjacent the light source (See Figures 1-2); and the encoding unit comprising a spatial light modulator (See 18 in Figures 1-2). Bates lacks a sampler for transmitting light into the sample and for receiving the non-absorbed light from the sample and being disposed adjacent to the detector. However, Ozaki et al. teaches a conventional spectroscopy system for detecting and measuring scattered light from a sample (See for example Abstract; Figures 2, 8), wherein a sampler in the form of a sample cell or cuvette is utilized to contain the sample under test (See 10 in Figure 2). It is noted that the incident and exit faces of the sample cell allows for incident light to be transmitted to the sample, as well as allow scattered light to be transmitted from the sample. Additionally, the sample is disposed adjacent to both the light source and the detector (See 2, 10, 28 in Figure 2). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the spectrometer of Bates include a sampler for transmitting light into the sample and for receiving the non-absorbed light from the sample and being disposed adjacent to the detector, as taught by Ozaki et al., for the purpose of increasing the sensitivity of the light scattering measurement, while allowing for convenient placement and storage of samples under test.



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14. Claims 13-16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bates in view of Ozaki et al. as applied to Claim 1 above, and further in view of Holm-Kennedy et al.

Bates in view of Ozaki et al. discloses the invention as set forth above in Claim 1, except for the optical filter comprising one or more dielectric bandpass filters, such as one or more linear or nonlinear variable filters. However, Holm-Kennedy et al. discloses several embodiments of conventional interference wedge filters based on dielectric thin films for spectrometer applications (See for example Abstract), wherein the wedge filters may be linear or nonlinear (See Figures 1-5). In addition, more than one wedge filter may be utilized in series (See for example Figure 3). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the optical filter of the spectrometer of Bates in view of Ozaki et al., comprise one or more dielectric bandpass filters, such as one or more linear or nonlinear variable filters, as taught by Holm-Kennedy et al., for the purpose of providing controlled bandwidth characteristics while minimizing or eliminating crosstalk.

***Allowable Subject Matter***

15. Claim 53 is allowed.
16. Claims 3-7, 31-34, 63-64 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
17. The following is a statement of reasons for the indication of allowable subject matter:

Claims 3-7 are allowable over the cited art of record for at least the reasons as previously set forth in Section 18 of the Office Action dated 10/3/05.

Claim 31-34 are allowable over the cited art of record for at least the reasons as previously set forth in Section 18 of the Office Action dated 10/3/05.

Claim 53 is allowable over the cited art of record for at least the reasons as previously set forth in Section 18 of the Office Action dated 10/3/05.

Claim 63 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest a spectrometer system, as generally set forth in Claims 1 and 63, the spectrometer system including, in combination with the features recited in Claims 1 and 63, the sampler being configured to received the filtered, encoded light from the encoder.

Claim 64 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest a spectrometer, as generally set forth in Claims 29 and 64, the spectrometer including, in combination with the features recited in Claims 29 and 64, the encoding unit being operable to select at least a first subset of the passbands of light or a second subset of the passbands of light for transmission to a sampler adapted to interrogate a biological sample.

***Conclusion***

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

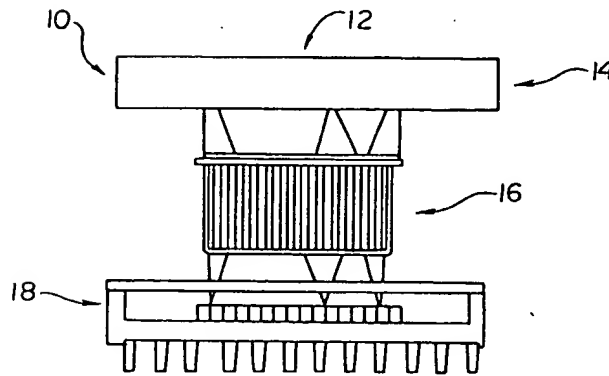


Arnel C. Lavarias  
Patent Examiner  
Group Art Unit 2872  
2/21/06

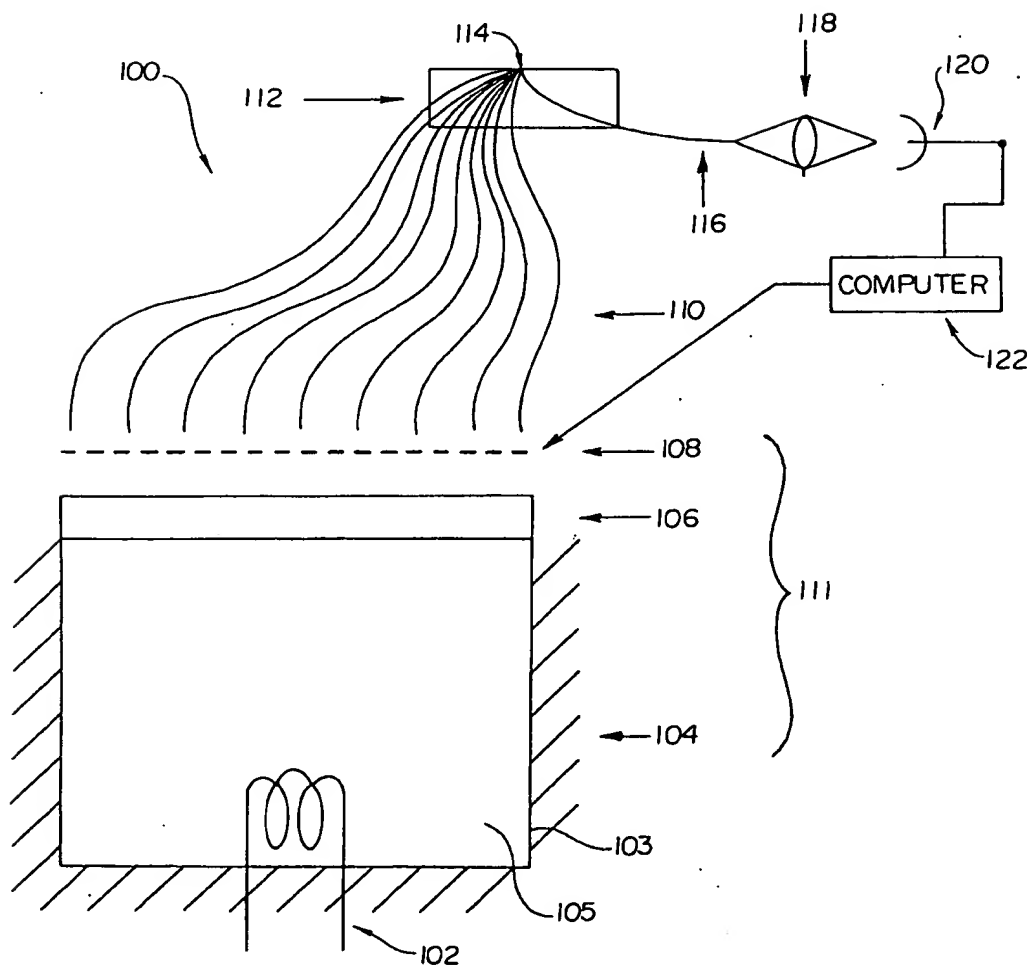


**Fig. 1**

PRIOR ART

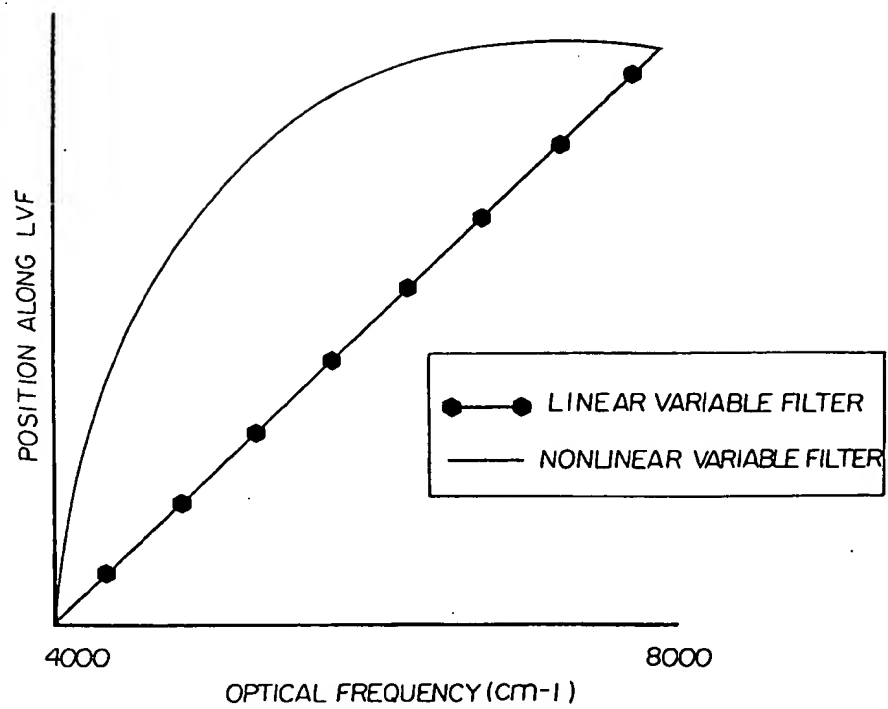


**Fig. 2**

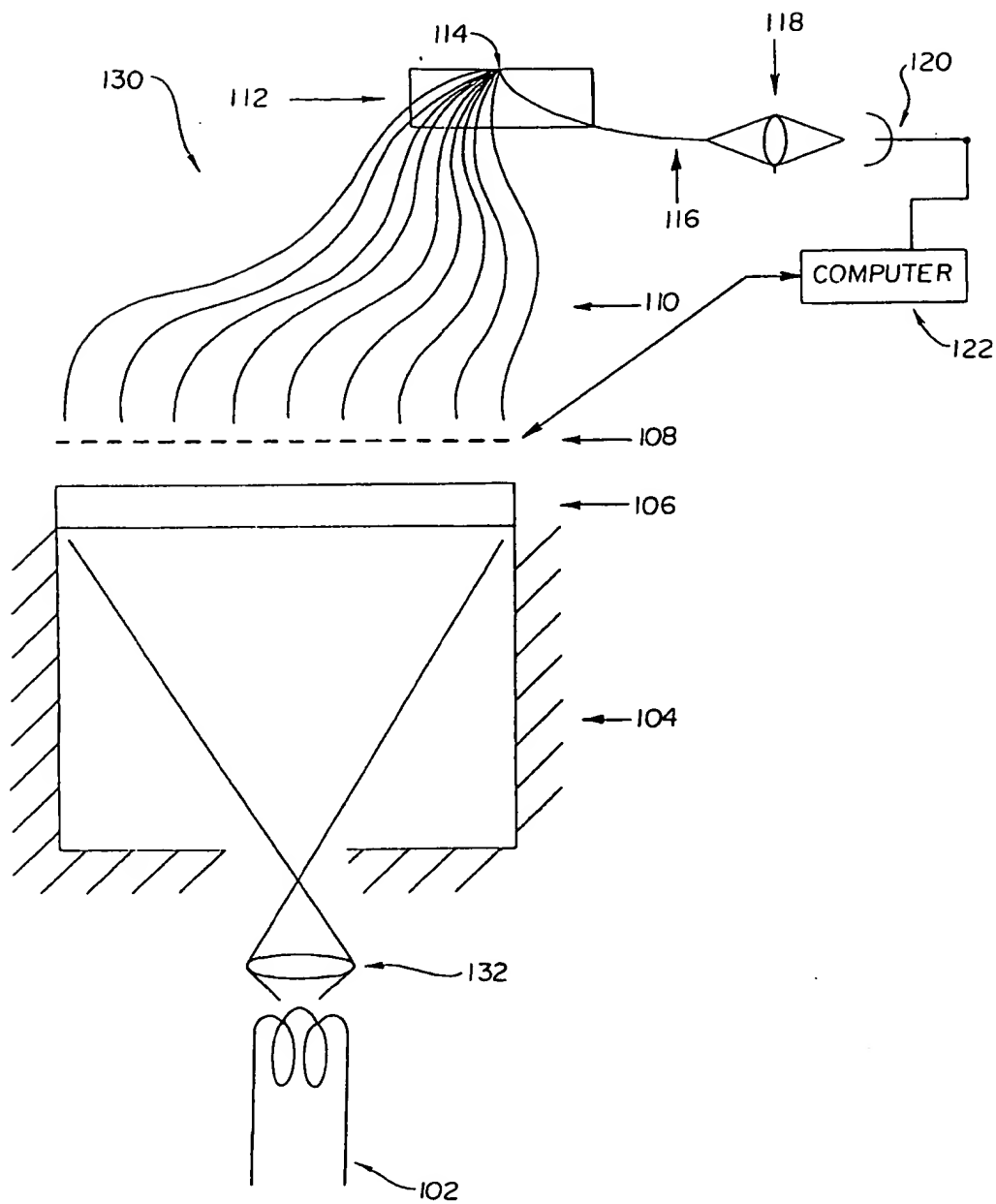


Drawing Changes  
Approved  
AC  
2/21/06

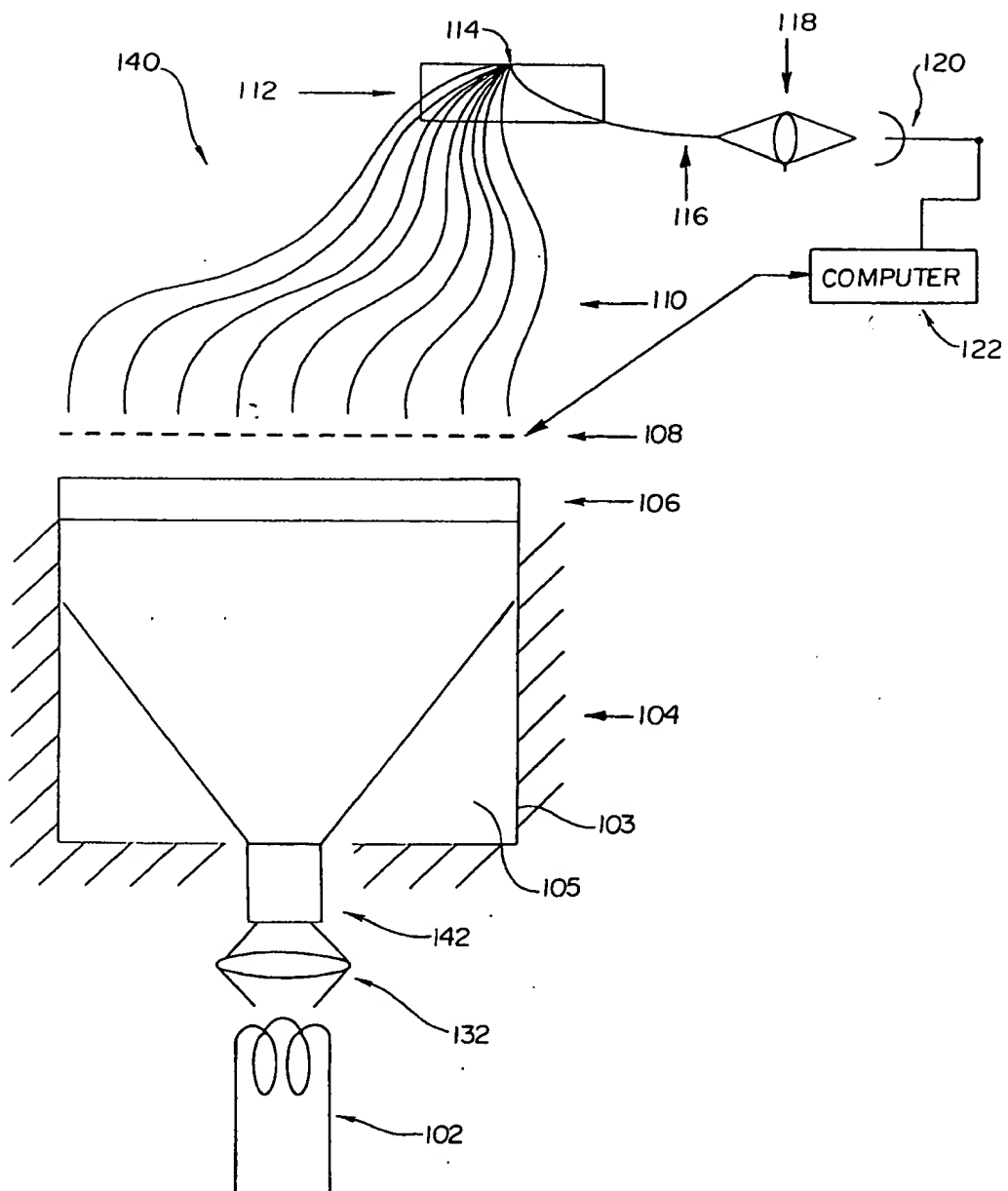
**Fig. 3**



**Fig. 4**

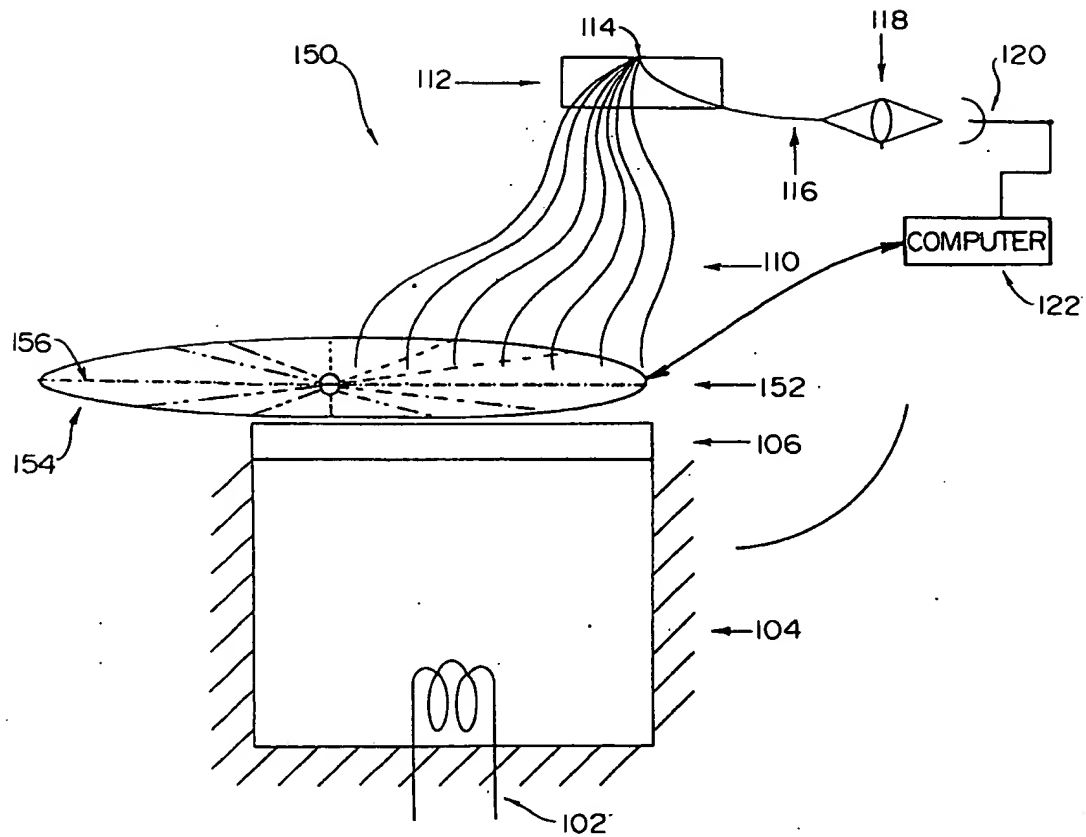


**Fig. 5**

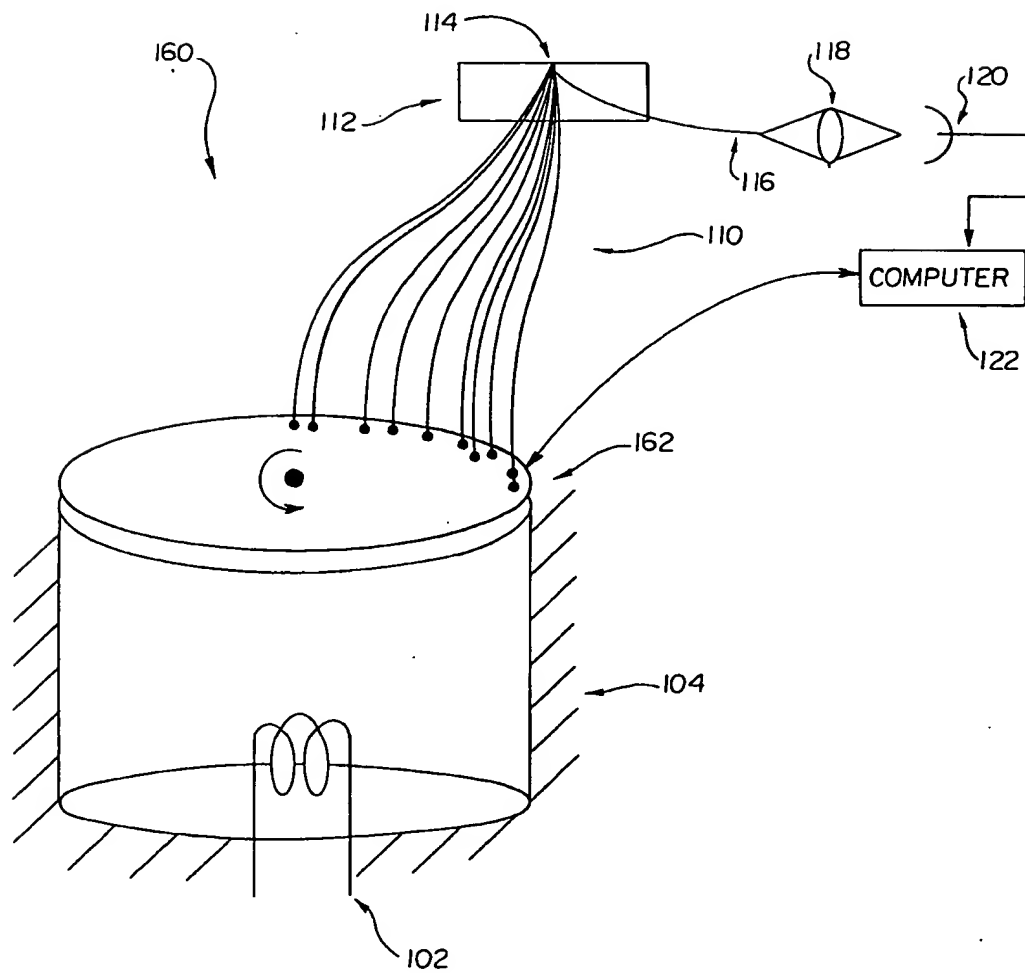




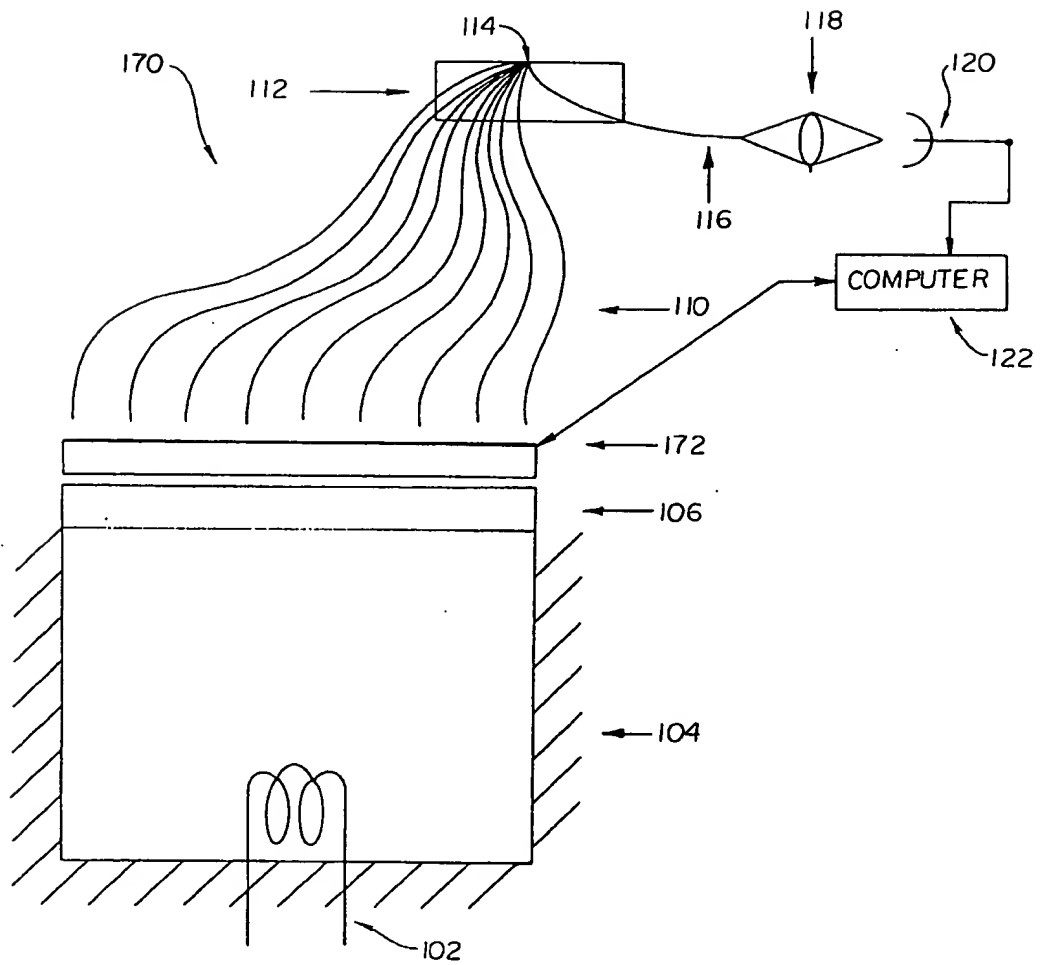
**Fig. 6**



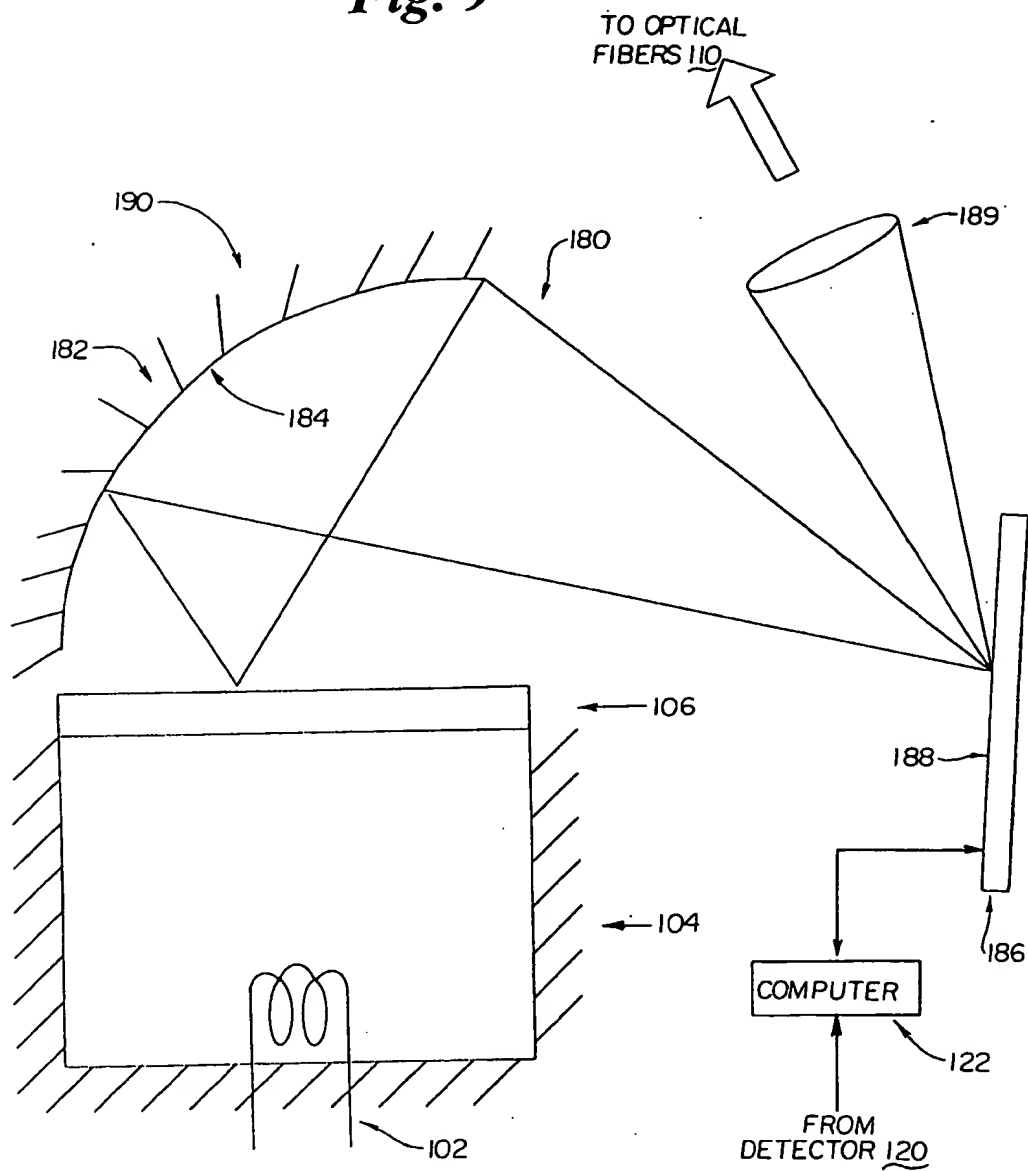
**Fig. 7**



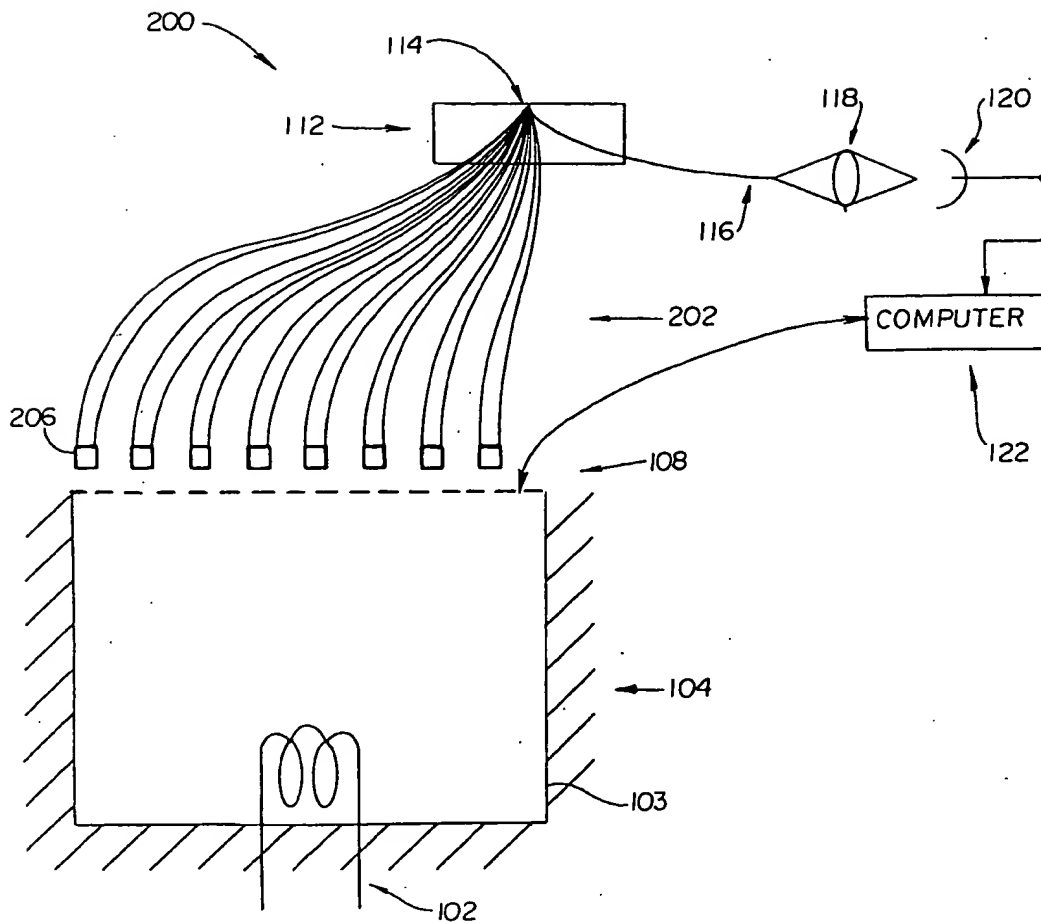
**Fig. 8**



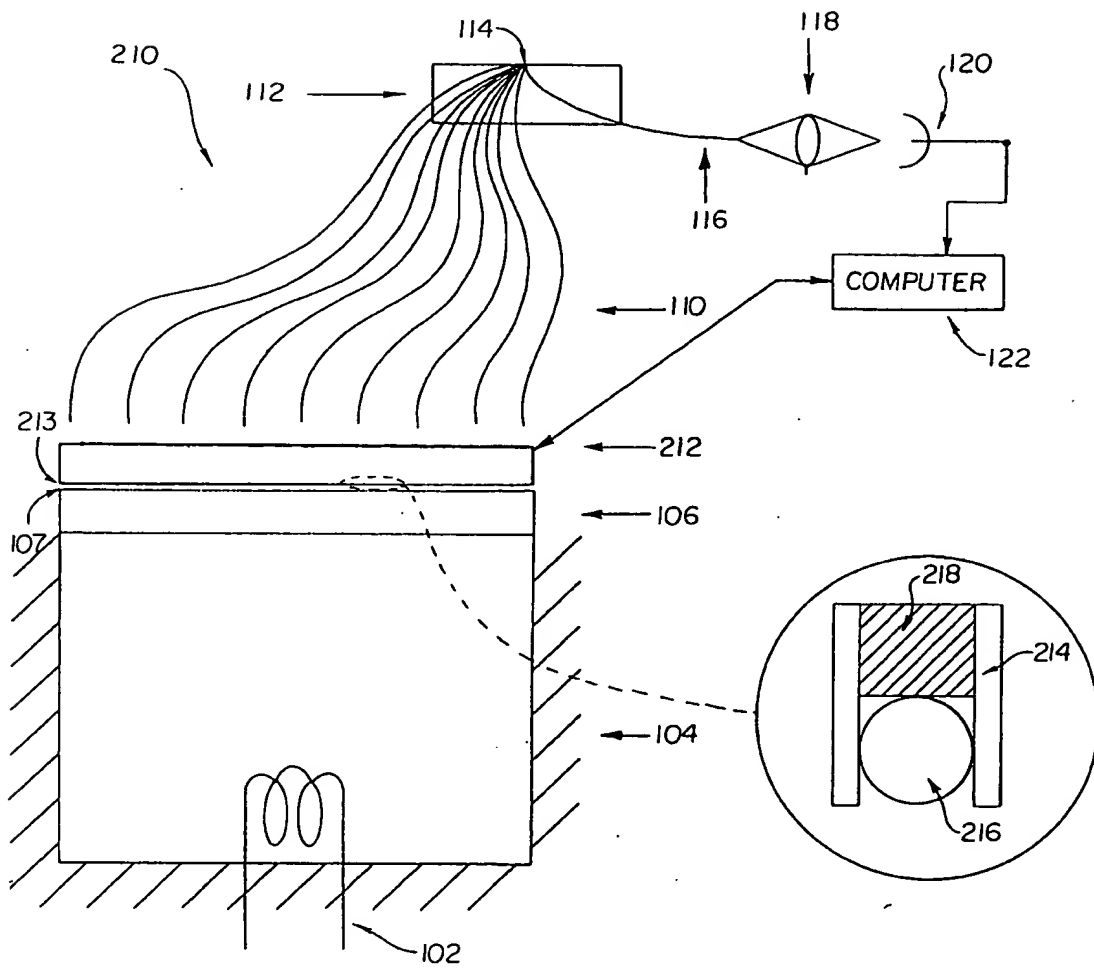
**Fig. 9**



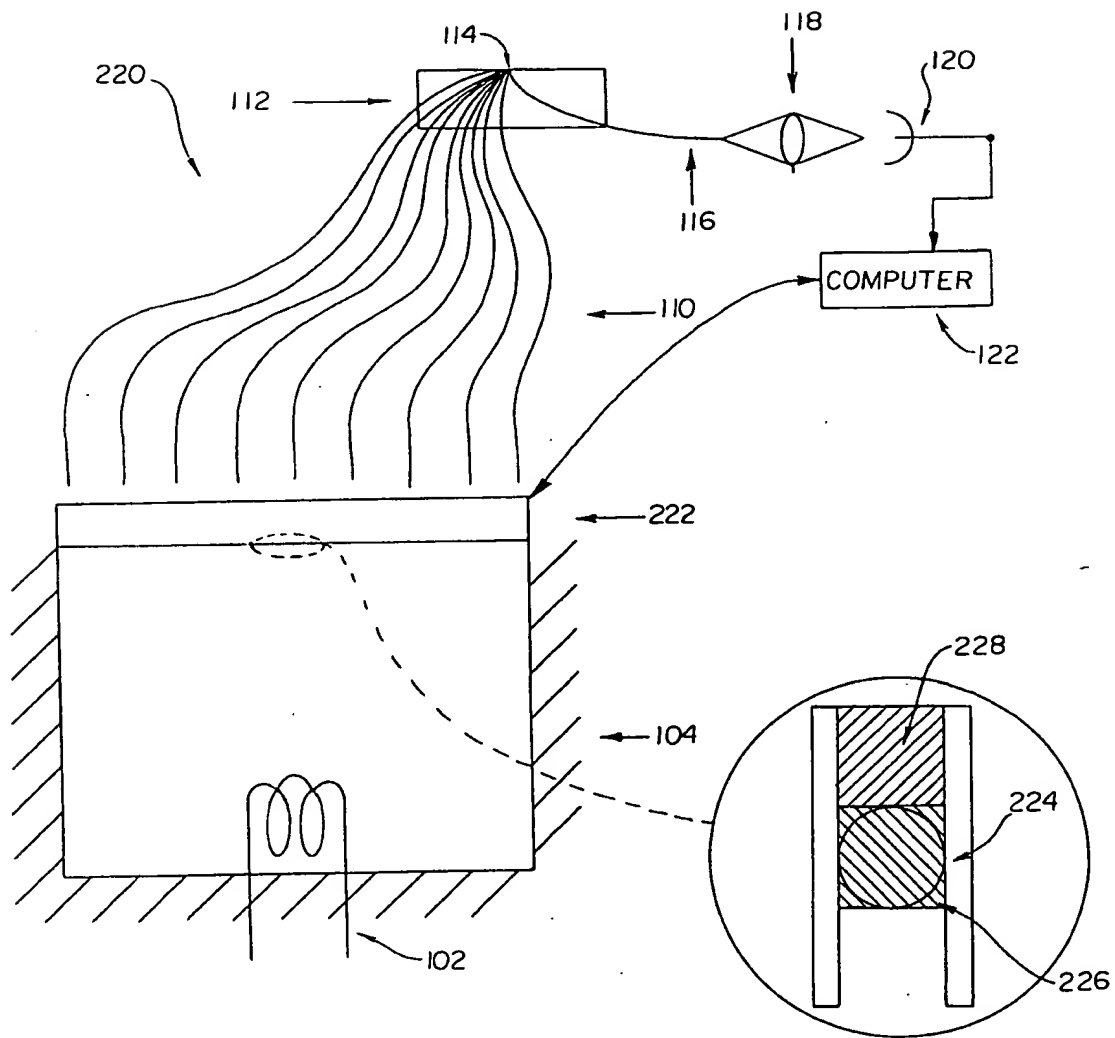
**Fig. 10**



**Fig. 11**



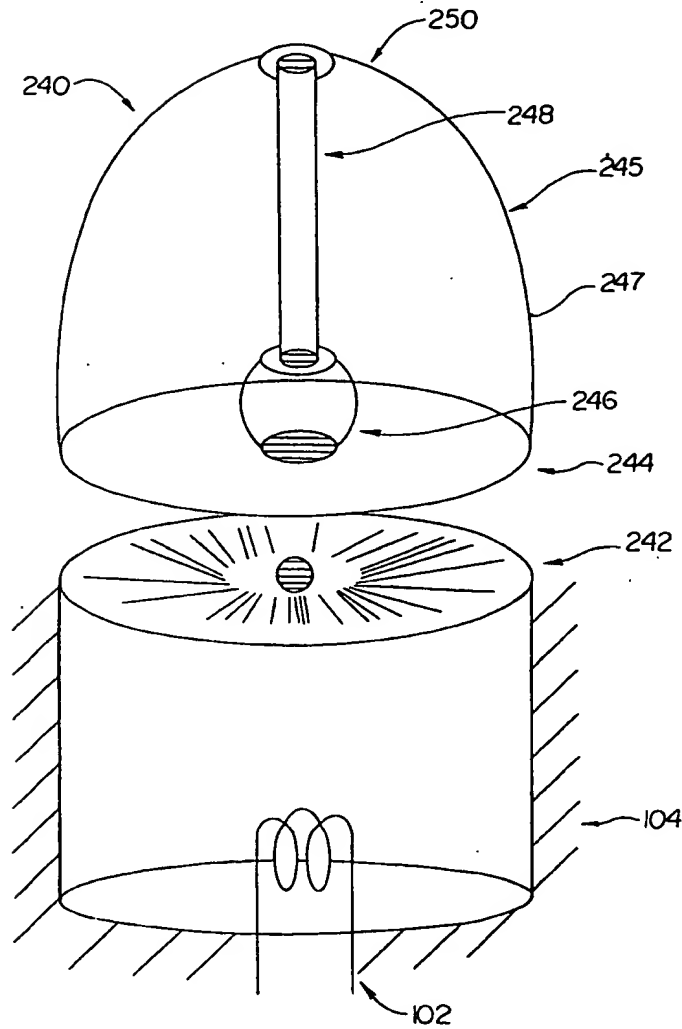
**Fig. 12**







**Fig. 14**



**Fig. 15**

